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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/608,457

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9405

7590

09/08/2004

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EXAMINER

CAO, HUEDUNG X

ART UNIT

PAPER NUMBER

2821

DATE MAILED: 09/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/608,457

Applicant(s)

YOSHIDA ET AL.

Examiner

Huedung X Cao

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 June 2003.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-21 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 11/17/03.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over NANT et al. (6,563,474).

As per claim 1, Nantz teaches the claimed multiaxial antenna, comprising: a core, which includes at least two arm portions, each arm portion extending in a direction different from the other arm portion (Nantz, column 4, lines 56-65); and coil portions, wherein each arm portion has a coil portion provided about it (Nantz, figures 3-4). It is noted that Nantz does not explicitly teach this multiaxial antenna is implemented in a

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“chip” as claimed. However, it would have been obvious to a person of ordinary skill in the art to implement Nantz system in a chip because the small size of the remote access device such as antenna in a chip improves the mobility of the device and simplify the mass production of the antenna.

Claim 2 adds into claim 1, wherein the core is shaped generally like a cross, wherein the arm portions include an X-axis arm portion and an Y-axis arm portion, the Y-axis arm portion extending perpendicular to the X-axis arm portion, and wherein the coil portions include an X-axis coil portion provided about the X-axis arm portion and an Y-axis coil portion provided about the Y-axis arm portion which Nantz teaches in column 5, lines 51-59.

Claim 3 adds into claim 2, wherein a Z-axis coil portion provided about a Z axis that extends perpendicular to the X-axis arm portion and the Y-axis arm portion which Nantz teaches in column 5, lines 14-19.

Claim 4 adds into claim 3, wherein the cross-shaped core has four radially outer tips, and wherein the Z-axis coil portion formed by winding an electric wire along lines that are parallel to lines passing through the tips of the core which Nantz teaches in figure 4.

Claim 5 adds into claim 4, wherein the Z-axis coil portion is arranged such that the Z-axis coil portion does not protrude radially outward beyond the tips of the core which Nantz teaches in figures 3-4.

Claim 6 adds into claim 3, wherein the Z-axis coil portion is displaced from the core in relation to a direction of the Z-axis which Nantz does not explicitly teach.

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However, it would have been obvious because the coils of three axis overlapped each others.

Claim 7 adds into claim 3, wherein a casing for accommodating the core, wherein the Z-axis coil portion is wound about the casing which Nantz does not explicitly teach. However, it would have been obvious because such casing improves the generation of magnetic field from the core.

Claim 8 adds into claim 3, wherein a plurality of contacts, each contact being connected to one of the coil portions, wherein the contacts extend through, and are fixed to, a circuit board on which the multiaxial antenna chip is mounted which Nantz does not explicitly teach. However, would have been obvious because the contacts in a chip mount circuit board are arranged to be fixed throughout the circuit.

Claim 9 adds into claim 8 when the multiaxial antenna chip is viewed along the Z axis, the contacts are arranged asymmetrically which would have been obvious because the arrangement of chip on the circuit board yields any structures symmetrically, asymmetrically, ... dependent on the application.

Claim 10 adds into claim 3, wherein a claw portion, wherein the claw portion extends through, and is engaged with, a circuit board on which the multiaxial antenna chip is mounted which Nantz does not explicitly teach. However, it would have been obvious because the circuit board need to be hold firmly in the device.

Claim 11 adds into claim 2, wherein the core includes an X-axis core piece and a Y-axis core piece, wherein the core pieces extend perpendicular to each other and are laid on top of each other, and wherein the X-axis core piece includes the X-axis arm

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portion, and the Y-axis core piece includes the Y-axis arm portion which Nantz teaches in column 4, lines 56-65.

Claim 12 adds into claim 11, wherein the core pieces are laid on top of each other such that portions of the core pieces that are not laid on top of each other are in the same plane which Nantz does not explicitly teach. However, it would have been obvious because such arrangement reduces the space to store this device.

Claim 13 adds into claim 11, wherein at least one of the core pieces has a concave portion at a section that is laid on top of the other core piece, wherein the other core piece is engaged with the concave portion which Nantz does not explicitly teach. However, it would have been obvious because such arrangement reduces the space to store this device.

Claim 14 adds into claim 11, wherein at least one of the core pieces is bent such that a section that is laid on top of the other core piece is displaced relative to the remainder of the bent core piece in a direction away from the other core piece which Nantz does not explicitly teach. However, it would have been obvious because such arrangement reduces the space to store this device.

Claim 15 adds into claim 2, wherein the X-axis arm portion is a pair of X-axis arm portions that extend in opposite directions from a center of the core, wherein the Y-axis arm portion is a pair of Y-axis arm portions that extend in opposite directions from the center of the core, wherein the X-axis coil portion is a pair of X-axis coil portions, each corresponding to one of the X-axis arm portions, and wherein the Y-axis coil portion is a pair of Y-axis coil portions, each corresponding to one of the Y-axis arm portions which

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Nantz teaches in figures 3-4..

Claim 16 adds into claim 11, wherein the X-axis coil portion is provided only in a section of the X-axis core piece that is not laid on top of the Y-axis core piece, and wherein the Y-axis coil portion is provided only in a section of the Y-axis core piece that is not laid on top of the X axis core piece which Nantz does not explicitly teach.

However, it would have been obvious because such arrangement reduces the space to store this device.

Claim 17 adds into claim 11, wherein wherein the X-axis coil portion is provided both in a section of the X-axis core piece that is laid on top of the Y-axis core piece and in a section of the X-axis core piece that is not laid on top of the Y-axis core piece, and wherein the Y-axis coil portion is provided both in a section of the Y-axis core piece that is laid on top of the X-axis core piece and in a section of the Y-axis core piece that is not laid on top of the X-axis core piece which Nantz does not explicitly teach. However, it would have been obvious because such arrangement reduces the space to store this device.

Claim 18 adds into claim 1, wherein the core is flexible which Nantz does not explicitly teach. However, it would have been obvious to use a flexible core because it improves the durability of the circuit.

Claim 19 adds into claim 18, wherein the core is constructed by stacking a plurality of flexible sheets which Nantz does not explicitly teach. However, it would have been obvious to use a flexible core because it improves the durability of the circuit and reduces the heat.

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Claim 20 adds into claim 7, wherein the core includes an X-axis core piece and a Y-axis core piece, wherein the core pieces extend perpendicular to each other and are laid on top of each other, and wherein the X-axis core piece includes the X-axis arm portion, and the Y-axis core piece includes the Y-axis arm portion which nantz teaches in figures 3-4.

Claim 21 adds into claim 20, wherein a plurality of contacts, each contact being connected to one of the coil portions, wherein the contacts extend through, and are fixed to, a circuit board on which the multiaxial antenna chip is mounted which Nantz does not explicitly teach. However, it would have been obvious because the contacts in a chip mount circuit board are arranged to be fixed throughout the circuit.

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Inquires

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Huedung Cao whose telephone number is (571) 272-1939.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong, can be reached on (571) 272-1834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Huedung Cao
Patent Examiner


Don Wong
Supervisory Patent Examiner
Technology Center 2800